IDEA 0698

16 March 1962

MEMORANDUM FOR: Acting Chief, Development Projects Division

SUBJECT : Weather Forecast Reliability.

1. The weather forecast which was the basis for the final GO-NO-GO decision to launch mission 3069 has aroused considerable concern over the reliability of such forecasts. Therefore, some comments on the source and reliability of the weather forecasts used in the DPD operations seem to be in order.

2. These forecasts are provided by the Air Force Global Weather Central at SAC headquarters. A small group of forecasters there are security cleared for the DPD projects. They work in an area which is secure from the main work space. This group is supervised by Lt Col J. J. Allen who is reputed to be the best practical weather forecaster in the Air Force. He personally supervised the preparation of the forecasts for mission 3069.

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3. The past forecasting record of this group has been phenomenally good. Forecast verification scores compiled on the missions flown out of [redacted] prior to May 1960 indicated average reliability of 92%. That is, 92% of the areas forecast to be favorable were actually found to be favorable. 2/8 or less cloud cover is considered favorable for IDEALIST operations.

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4. In the [redacted] areas we can not expect the same high degree of forecast reliability as was obtained over the middle east. The Climatology of this area is such that the probability of encountering favorable conditions is less than 5% in all months of the year except October, November and December. Even during those better months the probability of favorable conditions occurring is less than 20%. This means favorable conditions can be expected to occur less than 2 days per month, except during

late fall or early winter when they can be expected only 3 to 5 days per month.

5. In spite of the infrequency of favorable weather, 58% of the areas photographed on the five missions flown over [redacted] during January 1961 were in favorable weather. The photographs obtained on mission 3066 in February 1962 were over 95% cloud free. These missions were launched on the basis of forecast weather.

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6. In most instances weather forecast errors are limited to such things as slight displacement of the lines separating favorable from unfavorable weather, or slight variations in the amount of cumulus cloud. In the case of mission 3069 we were faced with overcast stratus cloud over most of [redacted] If the wind flow pattern, and consequently the moisture content of the lower 6000 ft of the atmosphere, had change as the forecaster believed it would, there is little doubt that virtually all of the stratus cloud would have disappeared. It was a case where the entire target area was almost certain to be either overcast or virtually clear. Thus, any weather forecasting error was bound to be a spectacular one.

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7. One other operational factor must be considered when assessing the reliability of the forecasts. In areas where good weather occurs frequently, we can operate with extremely conservative forecasts. That is, we can wait until the weather gets good and the forecaster is certain that it will remain so. In cloudy areas, such as [redacted] periods of good weather not only occur infrequently--they are of short duration when they do occur. Therefore, it is necessary that the forecasters call the long shots, to be certain that a favorable day does not come and go before we can run a mission. This situation is bound to give us more forecast errors. However, it should not destroy our faith in the forecasts.

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Chief, Weather Staff